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(54) Title: PROCESS FOR PRODUCING LOW-K DIELECTRIC FILMS

(57) Abstract: The invention relates to processes for producing low-k dielectric films on semiconductors or electrical circuits, which comprises using incompletely condensed polyhedral oligomeric silsesquioxanes of the formula $[(R_aX_bSiO_{1.5})_m(R_cY_dSiO)_n]$ with: a, b = 0-1; c, d = 1; m+n ≥ 3; a+b = 1; n, m ≥ 1, R = hydrogen atom or alkyl, cycloalkyl, alkenyl, cycloalkenyl, alkynyl, cycloalkynyl, aryl or heteroaryl group, in each case substituted or unsubstituted, X = an oxy, hydroxyl, alkoxy, carboxyl, silyl, silyloxy, halogen, epoxy, ester, fluoroalkyl, isocyanate, acrylate, methacrylate, nitrile, amino or phosphine group or substituents of type R containing at least one such group of type X, Y = hydroxyl, alkoxy or a substituent of type O-SiZ₁Z₂Z₃, where Z₁, Z₂ and Z₃ are fluoroalkyl, alkoxy, silyloxy, epoxy, ester, acrylate, methacrylate or a nitrile group or substituents of type R and are identical or different, not only the substituents of type R being identical or different but also the substituents of type X and Y in each case being identical or different, and comprising at least one hydroxyl group as substituent of type Y, for producing the film, and to low-k dielectric films produced by this process.



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